



## Authorizations and Permits for Protected Species (APPS)

File #: 17381

Title: Ecology, genetic origin, and habitat use patterns

### Applicant Information

**Name:** Kristen Hart  
**Title:** Research Ecologist  
**Affiliation:** US Geological Survey, Southeast Ecological Science Center  
**Address:** Davie Field Office, 3205 College Avenue  
**City,State,Zip:** Davie, FL 33314  
**Phone Number:** (954)577-6335  
**Fax Number:** (954)475-4125  
**Email:** kristen\_hart@usgs.gov

### Project Information

**File Number:** 17381  
**Application Status:** **Application Complete**  
**Project Title:** Ecology, genetic origin, and habitat use patterns of sea turtles tagged in and around Dry Tortugas National Park  
**Project Status:** Renewal  
**Previous Federal or State Permit:** [13307](#)  
**Permit Requested:**

- ESA Section 10(a)(1)(A) permit (other)

  
**Where will activities occur?** US Locations including offshore waters  
**Research Timeframe:** **Start:** 07/10/2013 **End:** 07/10/2018  
**Sampling Season/Project Duration:** Project will begin in July 2013 and continue for 5 years.  
**Abstract:** Despite knowledge of general sea turtle nesting trends in the Dry Tortugas National Park (DRTO), little information was available about in-water sea turtle use of natural resources. By capturing and tagging endangered green (Chelonia mydas), hawksbill (Eretmochelys imbricata), Kemp's ridley (Lepidochelys kempii) and loggerhead (Caretta caretta) sea turtles in DRTO over the last 5 years, we have begun to discover fine-scale temporal and spatial patterns of sea turtle habitat use and movement patterns within and outside of the National Park. We seek to continue this work and sample all captured turtles for additional biological samples (i.e., diet, genetics). This project will begin in July 2013 and continue for 5 years until July 2018. We anticipate capturing up to 1,500 turtles (some recaptures) because of an increased study site boundary. In-water capture methods include diver-assisted captures, dipnetting, cast netting, and tangle netting. Non-target species that may be incidentally captured include several species of sharks (n = 25 individuals) and fish (n = 50 individuals). No marine mammal captures are anticipated.

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## Project Description

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**Purpose:** Florida's nesting colonies are a critically important segment of turtle populations in the Atlantic. The Dry Tortugas nesting colonies are an important part of this group, both for their genetic distinctiveness (Pearce 2001) and their isolation from many of the threats facing most turtle nesting areas. However, much remains unknown of the Dry Tortugas colonies. In a 2006 report to the National Park Service summarizing ecological trends in the Dry Tortugas sea turtle monitoring program 1982-2006 (Van Houtan and Pimm 2006), the authors suggested several changes to the Dry Tortugas National Park Sea Turtle Monitoring Program. These additional tasks included extending nesting surveys beyond the few summer months of peak nesting. As well, in this report the authors urgently encouraged initiating demographic, tagging, and tracking studies of all sea turtles within DRTO, those found on both on nesting beaches and in the water. In these new studies, information on where nesting females spend the rest of the year, and frequency and duration of internesting intervals could be gleaned. Also encouraged were night-time surveys to measure female carapaces while they nest, affix GPS units to some, and apply metal ID tags to their hind flippers. Basic tagging and tracking could also accompany existing daytime surveys, and target non-nesting species, such as the many juvenile Hawksbills known to frequent the Dry Tortugas reefs. Understanding where the Dry Tortugas Hawksbills, GGeens, and Loggerheads hatch from, and where they migrate to, would significantly increase the value of the DRTO turtle program, and it could present many collaborative opportunities with other state, federal, and international scientific organizations.

Our study will complement previous and current research by NPS in DRTO nesting areas by addressing turtle habitat use outside the time of nesting, away from the nesting beach, in addition to their habitat use during nesting season. Our study will also complement USGS-Hart's first 5-yr of tagging and tracking nesting green turtles and loggerheads on DRTO beaches, and her first 5-yr of tagging and tracking hawksbills, green turtles, and loggerheads captured in the water. This work is not duplicative of other ongoing sea turtle work. Although the newly proposed study site encompasses the study sites of other researchers (i.e., Inwater Research Group in the Keys, Schroeder et al.'s long term Florida Bay site, and Tucker and Schmid's sampling site off Charlotte Harbor, FL and in the Ten Thousand Islands), FL, we would not sample at their sites. It is not our intention to duplicate the capture efforts of others. Instead, we are requesting permission to expand our original study site from simply encompassing DRTO to now include areas to which satellite-tagged turtles have transited; we would like permission to go to these distinct foraging sites to explore the benthic habitat and capture and tag new turtles and recapture tagged turtles after they depart DRTO waters. We aim to satellite-tag turtles at foraging sites (see Hart et al. 2012) and then track them back to nesting areas; this type of work at foraging grounds is unprecedented and would provide a much more holistic picture of the timing of nesting migrations, possibly shed light on when/where mating occurs, and inform the calculation of remigration intervals for nesting females.

One study goal is to continue to utilize and augment the existing array of acoustic Vemco™ receivers at and around DRTO to track the movements of sea turtles that we tag both within and outside the Park. To this end, we will equip turtles with both acoustic and satellite tags (some with both types of tags), as well as with specialized acceleration data loggers (ADLs). We seek to answer questions such as What proportion of time are endangered sea turtles spending within the Park and other protected areas in the region (i.e, Tortugas Ecological Reserves N and S, Florida Keys National Marine Sanctuary, Key West National Wildlife Refuge). We seek to identify specific habitat features that are important for these turtles and inform broad questions such as What is the genetic distinctiveness of DRTO turtles compared to other turtles sampled in the south Florida and Caribbean areas? We wish to continue to document the size classes of sea turtles that are present in DRTO waters and in regions where DRTO turtles have been tracked (i.e., at foraging sites). We aim to determine whether male loggerheads and green turtles use DRTO waters only at certain times of the year, perhaps inferring that DRTO could serve as an important mating ground. We also seek to continue to determine where inter-nesting habitats are located and what proportion of turtles utilize specific habitats repeatedly. An overarching goal of our project is to determine the location of feeding grounds for the various sea turtle species tagged, and explore those distinct foraging sites (see Hart et al. 2012) to enumerate the proportion of turtles at those sites with tags from other research projects. Van Houten and Pimm (2006) as well as Hamann et al. (2010) encouraged the study of these issues, and answers to these important questions will provide necessary biological information that will help to better understand sea turtles and manage human activities that affect these imperiled species.

In order to monitor the immigration and emigration of targeted species in the Research Natural Area (RNA) of Dry Tortugas National Park (DRTO), we initiated a sea turtle tagging and tracking project in 2008. From this study, we began characterizing the populations of the three sea turtle species in DRTO and quantified the proportion of time individuals spent in the RNA as compared to other areas of the park. To distribute capture effort within park boundaries, we began capturing turtles in the waters near Bush and Garden Keys, Northkey Harbor, and Pulaski Shoal. In addition to capture efforts, we recorded sightings of turtles as we patrolled the park by boat and marked the locations with a Global Positioning System (GPS) receiver. We captured turtles in the water with rodeo (diving from boat to snorkel-capture turtles), hand-capture, and dip-netting methods. In addition, seven acoustic receivers were placed by the U.S. Geological Survey (USGS) in the northeastern region of the park; all but one of these were placed outside the RNA. These locations were chosen based on spatial gaps in the network of receivers deployed by the Florida Fish and Wildlife Conservation Commission (FWC) and Mote Marine Laboratory (MML). We received data from the FWC/MML receiver array, which included more than 80 receivers spread throughout the park in all management areas and outside the park to the southwest.

Using satellite and acoustic telemetry techniques, we determined daily locations and movement patterns for tagged turtles, calculated home ranges and core-use areas, and statistically summarized the extent of overlap of these areas with that of the RNA. Several publications have resulted from our work in DRTO (see Hart et al. 2010, 2012), and we are currently summarizing data derived from in-water turtles captures and tracking for additional publications.

It is essential to understand the locations, movements, estimated population size, preferred habitats, and status (for example nesting, foraging, number of juveniles and adults, etc.) of marine turtles within DRTO to effectively manage activities that affect these imperiled species. Our capture and tagging results have informed decision-makers by providing key information on these population characteristics. Our spatial habitat-use information

provided details on locations and areas within and outside the park that turtles select, regardless of capture site. However, more information is needed about in-water sea turtle use of natural resources in Dry Tortugas National Park (DRTO), and beyond, once turtles leave the protected area boundaries.

**Description:** By capturing and releasing acoustically tagged endangered green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), Kemp's ridley (*Lepidochelys kempii*) and loggerhead (*Caretta caretta*) sea turtles from within the Research Natural Area (RNA) and within DRTO boundaries in general, we will continue to address fine-scale temporal and spatial patterns of sea turtle habitat use and movement patterns within the RNA zone of the National Park. We will also attach satellite tags to a subset of the acoustically-equipped turtles to determine over a wider spatial scale the proportion of time these endangered turtles are spending in the RNA, in areas adjacent to the RNA, in other areas of DRTO, and outside the Park. We will sample a subset of captured turtles for diet using the oral lavage and fecal sampling techniques and all turtles will be sampled for genetics using biopsy sampling and blood draws to determine region of origin and connectivity to other populations. We will also sample all turtles for stable isotopes (by taking tissue and carapace biopsies) to examine diet across different size classes of individuals over time.

Hand, rodeo, and tangle net capture of adult, subadult, and juvenile Kemp's ridleys (*Lepidochelys kempii*) is possible in our proposed study areas, and we believe we may encounter up to 40 individuals per year. We seek permission to sample these turtles to contribute to an overall understanding of their genetic diversity (blood and tissue samples), feeding ecology (isotope samples), and movement patterns within the Gulf of Mexico. We are specifically very interested in determining where Kemp's ridleys and tagged loggerheads overlap at foraging grounds, which can be determined through the satellite and acoustic tracking portion of our research.

We would like permission to capture, flipper tag, PIT tag, photograph, weigh, measure, collect biopsy punches (two total, one from flipper and one from carapace), collect blood samples for genetics, and affix an acoustic tag (wire attachment) and a satellite tag (epoxy attachment) to each of 10 Kemp's ridleys each year of the study (so 50 total over 5 years). We would also like to request permission to sample an additional 30 Kemp's ridleys as above, except these 30 would not be outfitted with acoustic or satellite tags (so 150 total over 5 years).

In the next 5-yr project window, we aim to expand the boundary of where our capture efforts may occur, as our satellite and acoustic tracking have shown that sea turtle foraging areas are often located away from the Park but relatively close to land in areas such as the FL Keys, southwest FL, northwest FL, off the coast of AL and MS (as well as off Mexico and in the Bahamas); see [http://www.seaturtle.org/tracking/?project\\_id=402](http://www.seaturtle.org/tracking/?project_id=402). Thus, a new goal of our project is to conduct in-water captures and habitat assessments at foraging grounds where satellite-tracked DRTO turtles take up residence and/or congregate.

This project will begin July 2013 and continue for 5 years. We anticipate capturing up to 1,500 turtles over a 5 year period. Capture methods include diver-assisted captures in-water, dip-netting, strike-netting, cast netting, rodeo capture, hand capture, and tangle netting. Additional information concerning objectives, methodology, and effects of the research can be found in the attached document. Non-target species that may be incidentally captured include several species of sharks and fish. No marine mammal interactions are anticipated.

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### Supplemental Information

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<b>Status of Species:</b>	Green turtle ( <i>Chelonia mydas</i> ): breeding populations in Florida listed as endangered under the Endangered Species Act (ESA) and on Appendix I on CITES
	Hawksbill turtle ( <i>Eretmochelys imbricata</i> ): listed as endangered throughout its range under the ESA and on Appendix I on CITES
	Loggerhead turtle ( <i>Caretta caretta</i> ): ESA threatened throughout its range and CITES Appendix I
	Kemp's ridley turtle ( <i>Lepidochelys kempii</i> ): listed as endangered throughout its range under the ESA and on Appendix I on CITES
<b>Lethal Take:</b>	N/A
<b>Anticipated Effects on Animals:</b>	<p>We estimate that some of the sea turtles surveyed will react to the survey craft, based on boat survey observations (K. Hart, personal observation). While the turtle's normal behavior may be temporarily affected, we do not feel that this reaction in any way harms the turtle and that boat surveys have minimal, short-term behavioral impact on sea turtles.</p> <p>We do not expect that individual turtles will experience more than short-term stresses during dipnetting/ cast net capture, and no injury or mortality is expected from dipnetting.</p> <p>Tangle nets are a type of passive, stationary fishing gear that incidentally capture turtles. They are minimally stressed within the confines of the net. Turtles will become entangled in the webbing of the net itself, which results in constriction marks around their head and flippers and may lead to their death due to forced submergence. We do not expect that individual turtles will experience more than short-term stresses during tissue and blood sampling (for genetic and stable isotope analyses). Researchers who examined turtles caught two to three weeks after sample collection noted the sample collection site was almost completely healed (J. Braun-McNeill, pers. comm.).</p> <p>Digit extraction might result in some minor discomfort to the turtle with no lasting effects--all 11 of the turtles sampled by the NMFS, Beaufort Laboratory exhibited normal behavior as they were released (J. Braun-McNeill, pers. comm.).</p> <p>Forbes (1999) stated that many individual turtles have been lavaged more than three times without any known detrimental effect.</p>

<b>Measures to Minimize Effects to Listed Species:</b>	We travel at low or idle speed almost 100% of the time, and we will not engage the motor when near sea turtles.
	After capture, the animal would be taken out of the net, quickly examined, and briefly secured, if necessary, in a modified cargo net on deck so that its limbs are held close to its body to prevent injuries to the turtle and personnel, but breathing will be unrestricted.
	Turtles will be handled in such a way as to avoid injury to the turtles themselves and to the researchers. During extremely warm weather, the turtle's carapace and head will be covered with a wet towel to avoid desiccation. During cooler weather, the towel will not be wet to avoid hypothermia. Hard-shelled turtles will kept in large, plastic containers (approximately 2 feet wide x 3 feet long x 1 foot deep/high) before sampling and prior to release. All turtles will be placed on foam pads for added comfort. If a turtle becomes stressed during the sampling process, we will cover the eyes with a wet towel; this often has a calming effect on the turtle. We do not plan to administer any drugs to the turtles, but if the need arises, we will have a licensed veterinarian administer the drugs and closely monitor the turtle's behavior after injection of the drug.
<b>Resources Needed to Accomplish Objectives:</b>	We do not have any concerns about interactions with manatees in the Dry Tortugas; however, there are manatees in the Everglades and along the SW FL coast. We will watch for manatees (Trichechus manatus) any time we have a tangle net in the water, and will pull the net in if we should see a manatee near the net.
	We have secured 5-yr USGS funding from the Priority Ecosystem Studies (PES) program and are always seeking new sources of funds. We have USGS boats and personnel that are dedicated to this project.
	<b>Disposition of Tissues:</b> Biological samples will be transported from DRTO to USGS in the buffers they were stored in at collection time. Samples sent to Dr. Naro-Maciel for genetics analyses will be accessioned in a centralized biological cryogenic repository, the Ambrose Monell Cryo Collection (AMCC AMNH). All other samples will be destroyed in analysis.
<b>Public Availability of Product/Publications:</b>	Endangered Species Research 2010
	Aquatic Biology 2010
	Biological Conservation 2012
	NPS reports 2012, 2009
	Online through STAT, www.seaturtle.org
	Annual reports
	Progress reports
	USGS web site
	Florida sea turtle meetings and International and Sea Turtle Symposium presentations (posters and talks)

Location/Take Information

Location

Research Area:

Atlantic Ocean

State:

FL

Location Description:

Almost 70 miles (112.9 km) west of Key West lies a cluster of seven islands that is Dry Tortugas National Park (DRTO). Our study boundaries will extend from DRTO east into Biscayne National Park, north around the Everglades, and up to Appalachicola.

Take Information

Line	Ver	Species	Listing Unit/Stock	Production /Origin	Life Stage	Sex	Expected Take	Takes Per Animal	Take Action	Observe /Collect Method	Procedure	Transport Record	Begin Date	End Date

1		Turtle, green sea	Florida Breeding Populations (NMFS Endangered)	Wild	Adult/ Subadult/ Juvenile	Unknown	30	1	Capture/Handle/Release	Hand and/or Dip Net	Count/survey; Epibiota removal; Instrument, drill carapace attachment; Instrument, epoxy attachment (e.g., satellite tag, VHF tag); Lavage; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Recapture (gear removal); Sample, blood ; Sample, fecal ; Sample, scute scraping; Sample, tissue ; Tracking; Weigh	N/A	7/10/2013	7/10/2018
		<b>Details:</b> rodeo capture, dip net, cast net; tissue and carapace sample.												
2		Turtle, green sea	Florida Breeding Populations (NMFS Endangered)	Wild	Adult/ Subadult/ Juvenile	Male and Female	30	1	Capture/Handle/Release	Hand and/or Dip Net	Count/survey; Epibiota removal; Instrument, epoxy attachment (e.g., satellite tag, VHF tag); Lavage; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Recapture (gear removal); Sample, blood ; Sample, fecal ; Sample, scute scraping; Sample, tissue ; Tracking; Weigh	N/A	7/10/2013	7/10/2018
		<b>Details:</b> rodeo capture, dip net, cast net; tissue and carapace sample.												
3		Turtle, green sea	Florida Breeding Populations (NMFS Endangered)	Wild	Adult/ Subadult/ Juvenile	Male and Female	30	1	Capture/Handle/Release	Hand and/or Dip Net	Count/survey; Epibiota removal; Instrument, drill carapace attachment; Lavage; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Recapture (gear removal); Sample, blood ; Sample, fecal ; Sample, scute scraping; Sample, tissue ; Tracking; Weigh	N/A	7/10/2013	7/10/2018
		<b>Details:</b> rodeo capture, dip net, cast net; tissue and carapace sample.												

4		Turtle, green sea	Florida Breeding Populations (NMFS Endangered)	Wild	Adult/ Subadult/ Juvenile	Male and Female	150	1	Capture/Handle/Release	Hand and/or Dip Net	Count/survey; Epibiota removal; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, blood ; Sample, fecal ; Sample, scute scraping; Sample, tissue ; Weigh	N/A	7/10/2013	7/10/2018
		<b>Details:</b> rodeo capture, dip net, cast net; tissue and carapace sample												
5		Turtle, hawksbill sea	Range-wide (NMFS Endangered)	Wild	Adult/ Subadult/ Juvenile	Male and Female	30	1	Capture/Handle/Release	Hand and/or Dip Net	Count/survey; Epibiota removal; Instrument, drill carapace attachment; Lavage; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Recapture (gear removal); Sample, blood ; Sample, fecal ; Sample, scute scraping; Sample, tissue ; Tracking; Weigh	N/A	7/10/2013	7/10/2018
6		Turtle, hawksbill sea	Range-wide (NMFS Endangered)	Wild	Adult/ Subadult/ Juvenile	Male and Female	50	1	Capture/Handle/Release	Hand and/or Dip Net	Count/survey; Epibiota removal; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, blood ; Sample, fecal ; Sample, scute scraping; Sample, tissue ; Weigh	N/A	7/10/2013	7/10/2018
		<b>Details:</b> rodeo capture, dip net, cast net; tissue and carapace sample.												
7		Turtle, hawksbill sea	Range-wide (NMFS Endangered)	Wild	Adult/ Subadult/ Juvenile	Male and Female	30	1	Capture/Handle/Release	Hand and/or Dip Net	Count/survey; Epibiota removal; Instrument, epoxy attachment (e.g., satellite tag, VHF tag); Lavage; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Recapture (gear removal); Sample, blood ; Sample, fecal ; Sample, scute scraping; Sample, tissue ; Tracking; Weigh	N/A	7/10/2013	7/10/2018
		<b>Details:</b> rodeo capture, dip net, cast net; tissue and carapace sample												

8		Turtle, hawksbill sea	Range-wide (NMFS Endangered)	Wild	Adult/ Subadult/ Juvenile	Male and Female	30	1	Capture/Handle/Release	Hand and/or Dip Net	Count/survey; Epibiota removal; Instrument, drill carapace attachment; Instrument, epoxy attachment (e.g., satellite tag, VHF tag); Lavage; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Recapture (gear removal); Sample, blood ; Sample, fecal ; Sample, scute scraping; Sample, tissue ; Tracking; Weigh	N/A	7/10/2013	7/10/2018
		<b>Details:</b> rodeo capture, dip net, cast net; tissue and carapace sample.												
9		Turtle, loggerhead sea	Range-wide (NMFS Threatened)	Wild	Adult/ Subadult/ Juvenile	Male and Female	100	1	Capture/Handle/Release	Hand and/or Dip Net	Count/survey; Epibiota removal; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, blood ; Sample, fecal ; Sample, scute scraping; Sample, tissue ; Weigh	N/A	7/10/2013	7/10/2018
		<b>Details:</b> rodeo capture, dip net, cast net; tissue and carapace sample.												
10		Turtle, loggerhead sea	Range-wide (NMFS Threatened)	Wild	Adult/ Subadult/ Juvenile	Male and Female	30	1	Capture/Handle/Release	Hand and/or Dip Net	Count/survey; Epibiota removal; Instrument, drill carapace attachment; Lavage; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Recapture (gear removal); Sample, blood ; Sample, fecal ; Sample, scute scraping; Sample, tissue ; Tracking; Weigh	N/A	7/10/2013	7/10/2018
		<b>Details:</b> rodeo capture, dip net, cast net; tissue and carapace sample.												
11		Turtle, loggerhead sea	Range-wide (NMFS Threatened)	Wild	Adult/ Subadult/ Juvenile	Male and Female	30	1	Capture/Handle/Release	Hand and/or Dip Net	Count/survey; Epibiota removal; Instrument, epoxy attachment (e.g., satellite tag, VHF tag); Lavage; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Recapture (gear removal); Sample, blood ;	N/A	7/10/2013	7/10/2018

											Sample, fecal ; Sample, scute scraping; Sample, tissue ; Tracking; Weigh			
		<b>Details:</b> rodeo capture, dip net, cast net; tissue and carapace sample.												
12		Turtle, loggerhead sea	Range-wide (NMFS Threatened)	Wild	Adult/ Subadult/ Juvenile	Male and Female	30	1	Capture/Handle/Release	Hand and/or Dip Net	Count/survey; Epibiota removal; Instrument, drill carapace attachment; Instrument, epoxy attachment (e.g., satellite tag, VHF tag); Lavage; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Recapture (gear removal); Sample, blood ; Sample, fecal ; Sample, scute scraping; Sample, tissue ; Tracking; Weigh	N/A	7/10/2013	7/10/2018
		<b>Details:</b> rodeo capture, dip net, cast net; tissue and carapace sample.												
13		Turtle, Kemp's ridley sea	Range-wide (NMFS Endangered)	Wild	Adult/ Subadult/ Juvenile	Male and Female	10	1	Capture/Handle/Release	Hand and/or Dip Net	Count/survey; Epibiota removal; Instrument, drill carapace attachment; Instrument, epoxy attachment (e.g., satellite tag, VHF tag); Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, blood ; Sample, scute scraping; Sample, tissue ; Tracking; Weigh	N/A	7/10/2013	7/10/2018
		<b>Details:</b> rodeo capture, dip net, cast net; tissue and carapace sample.												
14		Turtle, Kemp's ridley sea	Range-wide (NMFS Endangered)	Wild	Adult/ Subadult/ Juvenile	Male and Female	30	1	Capture/Handle/Release	Hand and/or Dip Net	Count/survey; Epibiota removal; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, blood ; Sample, scute scraping; Sample, tissue ; Tracking; Weigh	N/A	7/10/2013	7/10/2018
		<b>Details:</b> rodeo capture, dip net, cast net; tissue and carapace sample.												



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## NEPA Checklist

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**1) If your activities will involve equipment (e.g., scientific instruments) or techniques that are new, untested,or otherwise have unknown or uncertain impacts on the biological or physical environment , please discuss the degree to which they are likely to be adopted by others for similar activities or applied more broadly.**

Yes, we will be deploying acoustic listening stations or receivers, anchored to the bottom, to record "pings" from tagged individuals. These devices will record "pings" from any tagged animal, so marine animals tagged by other researchers may be recorded in our area. While we intend to deploy the receivers for the duration of the study and retrieve them at the end of the study, other researchers may be interested in maintaining a network of these receivers on the bottom in order to keep track of movements and residence time of marine life in/around the Dry Tortugas, for example.

**2) If your activities involve collecting, handling, or transporting potentially infectious agents or pathogens (e.g., biological specimens such as live animals or blood), or using or transporting hazardous substances (e.g., toxic chemicals), provide a description of the protocols you will use to ensure public health and human safety are not adversely affected, such as by spread of zoonotic diseases or contamination of food or water supplies.**

All tissue and blood samples collected from turtles will be transported back to the USGS lab for storage, further subsampling, and analysis. All chemicals (e.g., DMSO) are pre-loaded into small tubes into which biological samples are placed. These samples will be in our possession the entire time during transit. Only trained personnel will be taking or handling blood.

**3) Describe the physical characteristics of your project location, including whether you will be working in or near unique geographic areas such as state or National Marine Sanctuaries, Marine Protected Areas, Parks or Wilderness Areas, Wildlife Refuges, Wild and Scenic Rivers, designated Critical Habitat for endangered or threatened species, Essential Fish Habitat, etc. Discuss how your activities could impact the physical environment, such as by direct alteration of substrate during use of bottom trawls, setting nets, anchoring vessels or buoys, erecting blinds or other structures, or ingress and egress of researchers, and measures you will take to minimize these impacts.**

We will be working in coral reef environments in the Dry Tortugas and surrounding Florida Keys National Marine Sanctuary, Everglades National Park, etc. Our activities will not, however, affect the physical environment. All nets would be tended 100% of the time, and anchoring would be kept to a minimum; when anchoring our capture boat, we place our anchor only in sand. We have only experienced individuals with Dept. of Interior Motorboat Operator Certification and US Coast Guard's 6-pack Captain's license operating our boat.

**4) Briefly describe important scientific, cultural, or historic resources (e.g., archeological resources, animals used for subsistence, sites listed in or eligible for listing in the National Register of Historic Places) in your project area and discuss measures you will take to ensure your work does not cause loss or destruction of such resources. If your activity will target marine mammals in Alaska or Washington, discuss measures you will take to ensure your project does not adversely affect the availability (e.g., distribution, abundance) or suitability (e.g., food safety) of these animals for subsistence uses.**

In the Dry Tortugas, there are sensitive cultural and natural resources present. We work in water above any cultural resources, and make sure not to damage any corals or known ship-wrecks. We report any new sightings of shipwrecks or anchors to NPS immediately. We do not anchor or scrape any seagrass or coral resources.

In the Everglades, there are also sensitive cultural and natural resources. We have not encountered any new shipwrecks there and our work in Everglades is concentrated on the SW coast, where mud and marine algae cover the bottom.

**5) Discuss whether your project involves activities known or suspected of introducing or spreading invasive species, intentionally or not, (e.g., transporting animals or tissues, discharging ballast water, use of equipment at multiple sites). Describe measures you would take to prevent the possible introduction or spread of non-indigenous or invasive species, including plants, animals, microbes, or other biological agents.**

We disinfect all equipment used on multiple turtles (such as calipers) between trips to different sites, and we have a separate set of gear/equipment for turtles with FP.

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## Project Contacts

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**Primary Contact:** Kristen Hart

**Principal Investigator:** Kristen Hart

**Other Personnel:**

Name	Role(s)
Michael	Co-Investigator
Cheriss	

Doug      Veterinarian  
Mader

Attachments

**Contact** - Kristen Hart: C8819T5Hart CV for DRTO Renewal NMFS Permit.docx (Added Sep 11, 2012)  
**Contact** - Michael Cheriss: C16298T5Cherkiss CV for DRTO Renewal NMFS Permit.docx (Added Sep 11, 2012)  
**Project Description** - P17381T117381 Application Supplemental Info Final.docx (Added Dec 4, 2012)

Status

<b>Application Status:</b>	Application Complete		
<b>Date Submitted:</b>	November 20, 2012		
<b>Date Completed:</b>	November 20, 2012		
<b>FR Notice of Receipt Published:</b>	December 5, 2012	<b>Number:</b>	0648-XC372
<b>Comment Period Closed:</b>	January 4, 2013	<b>Comments Received:</b>	No
<b>Last Date Archived:</b>	July 10, 2013	<b>Comments Addressed:</b>	No

- **ESA Section 10(a)(1)(A) permit (other)**
  - Current Status:** Issued    **Status Date:** July 10, 2013
  - Section 7 Consultation:** Formal Consultation
  - NEPA Analysis:** Categorical Exclusion
  - Date Cleared by General Counsel:** July 1, 2013
  - Expire Date:** July 10, 2018
  - Analyst Information:**
    - 1)    Colette Cairns    Phone: (301)427-8414  
                                 Email: Colette.Cairns@noaa.gov
    - 2)    Amy Hapeman    Phone: (301)427-8401  
                                 Email: Amy.Hapeman@noaa.gov

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